LEVEL 2 FUNCTIONAL SKILLS QUALIFICATION IN MATHEMATICS

MARK SCHEME

Sample Assessment

Paper: RFSML2SAM01

Functional Skills in Mathematics Level 2 – Mark scheme

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Task 1 NC	Process (Task description)	Total mark	Mark allocation	Comments	PS or US	Subject content
Question 1	Correct addition of fractions	2	**1 mark:** Correct addition of two or more fractions or mixed numbers, eg $1\frac{1}{2} + \frac{3}{4} = 2\frac{1}{4}$		US	7b
	Correct mileage		**1 mark:** Calculate total mileage ie $4\frac{1}{6}$ miles	Accept 4.16, 4.17	US	7b
Question 2	Correct order	1	**1 mark:** 3/8, 5/8, ¾, 7/6, 4/3	Do not accept largest to smallest. Accept 1 1/6 and 1 1/3.	US	7a
Question 3	Correct division	1	**1 mark:** $273696 \div 24 = 11404$		US	2
Question 4	Use formula to calculate surface area	2	**1 mark:** 15 x 15 = (225) 225 x 6 = (1350)		US	17b
	Correct answer with units		**1 mark:** $1350cm^2$	Must show units	US	17b
Question 5a	Use scale accurately	2	**1 mark:** Valid method to calculate length, eg 7.5 x 1500 = (11250) OR 1.5 x 7.5 = (11.25) OR Other valid method	May be implied if 11.25 seen	PS	18a
	Correct length in metres		**1 mark:** correct length shown ie 11.25 (m)	Units not required	PS	18a
Question 5b	Method to find area of patio	3	**2 marks:** Valid method to find the area of the trapezium eg ½ (8.4 + 6.6) × 4 = (3 0) OR (8.4 × 4) – (1/2 x 1.8 × 4) OR (6.6 × 4) + (1/2 x 1.8 × 4) OR Other valid method	Award 1 mark for correct area of triangle, $3.6m^2$	PS	16b
	Correct area of patio		**1 mark:** Overall area of patio, ie $30m^2$	Units required	PS	16b
Question 5c	Calculate amount of dry mixture	4	**1 mark:** Calculate total amount of dry mixture required, eg 30 × 20kg = 600kg.	Allow FT for their area.	PS	11a
	Understanding of ratio shown		**1 mark:** Evidence of understanding of correct use of ratio, eg	Award if 3.33 seen Award if 100 seen	PS	11a

			1 in 6 OR 1/6th OR 6 parts seen OR 20/6 OR other valid calculations of ratio.			
Method to calculate number of bags of cement			**1 mark:** Method to calculate no of bags of cement, eg (600 × 1/6) ÷ 25 OR 600 ÷ 6 ÷ 25 OR 3.33 × 30 AND 99.99 ÷ 125 OR equivalent valid calculation.	Allow FT for their amount of dry mix.	PS	11a
Correct number of bags of cement			**1 mark:** Correct answer, ie 4 bags.	Allow FT for their amount of dry mix	PS	11a

Task 2	Process (Task description)	Total mark	Mark allocation	Comments	PS or US	Subject content
Question 6	Calculate total budget for house	5	**1 mark:** ((28 145 x 3.5) + 4 875) = (£)103 382.50	Accept 103 382.5	PS	2
	Method to convert distance		**1 mark:** 0.6 (m) x 1.6 = (0.96 km)	Accept any valid method to convert distance from miles to km Implied if 0.96 seen	PS	14a
	Interpret scatter graph		**1 mark:** Identify cost of available house at required distance from station =	Allow between 105 000 and 107 000 Award mark if implied by explanation.	PS	28b
	Correct final answer and reason		**1 mark:** No (with valid calculations) **1 mark:** for valid reason, eg because he needs £105 000 but he can only afford £103 382.50	Accept second mark for reason on FT if a correct reason is given based on their calculations.	PS	28b
Question 7	Find the mode	1	**1 mark**: Correct mode, ie 11		US	23b
Question 8	List in order of size	2	**1 mark**: Correct order ie: 9 9.5 10 10.5 11 12 15 23		US	23a
	Correct median		**1 mark**: Correct median, ie 10.75.		US	23a
Question 9	Calculate time taken to walk	2	**1 mark:** Correct calculation of the time to walk to the station, eg 2 miles at 3mph = 2 ÷ 3 × 60 = 40 mins	Accept 0.66 hours.	PS	15a
	Correct time for leaving house		**1 mark:** Correct time to leave home, ie 9.22(am)		PS	15a
Question 10	Method to calculate compound interest	5	**1 mark**: Correct calculation of interest 1.75% of £8500 eg 0.175 × 8500 = (£)148.75 for Money Saver	Award if 8648.75 or 8954.10 seen	PS	13a
	Correct interest after 3 years for Money Saver		**2 marks**: Correct calculation for compound interest used to find Money Saver balance after 3 years, eg Correct amount after 1 year ie 8500 + 148.75 = (£)8648.75 then Correct amount after 2 years ie 8648.75 + 151.35 = (£)8800.10 then Correct amount after 3 years ie 8800.10 + 154.00 = (£)8954.10	Award 1 mark for correct balance of Money Saver account after 2 years. Award 2 marks if 8954.10 seen. Award 1 mark for correct method.	PS PS	13a 13a

				Allow FT for their interest. Units not required.		
	Correct interest for Bonus Saver Difference in total balances		**1 mark:** Correct answer for Bonus Saver ie (£)8946.25	Units not required	PS	13b
			1 mark: £7.85		PS	13a
Task 3	**Process (Task description)**	**Total mark**	**Mark allocation**	**Comments**	**PS or US**	**Subject content**
Question 11	Correct substitution Correct answer to part in brackets	3	**1 mark**: Correct substitution into formula.		US	3
			1 mark: 0.2 OR 1/5 OR 1/25 seen.	May be implied if 4 seen	US	12
	Correct % given		**1 mark**: 4	% sign not required	US	12
Question 12a	Method to calculate sun hours in 2017	3	**1 mark:** Valid method to calculate 2017 sun hours from the given mean, eg 94.5 × 12 months = 1134	May be implied if 31 seen.	PS	25
	Find total sun hours except Dec 2017		**1 mark:** Add 47 + 61 + 119 + 128 + 214 + 108 + 144 + 126 + 94 + 56 + 6 (= 1103)	May be implied if 31 seen.	PS	25
	Subtraction		**1 mark:** 1134 - 1103 =31 OR Other valid calculation method AND 'Yes, Raheema is correct'	Do **not** award if 31 not seen.	PS	25
Question 12b	Correct year identified by comparing ranges	1	**1 mark:** 2017 Eg 206 - 21 = 185 AND 214 - 6 = 208	Do **not** award if no supporting calculations of range.	PS	25

Question 12c	Correct kWh calculated	3	**1 mark**: Correct number of kWh ie. 1.225 ÷ 1.09 = 1.123853211009174	Award for rounding to 2 or 3 dp, ie 1.12 OR 1.124	PS	10d
	Correct kWh per month Correct cost of electricity		**1 mark**: Correct number of kWh in June, ie 1.123853211009174x1.08 = 121.376146789	Allow FT from their number of kWh Allow FT for rounded figures, eg 1.124 x 108 = 121.392 1.12 x 108 = 120.96	PS	10c
			1 mark: Correct cost of electricity, ie 121.376146789x0.143 = (£) 17.35 OR £17.36	Allow FT For rounded figures to 2 or 3 dp, eg 120.96 x 0.143 = (£)17.29 OR 17.30 121.392 x 0.143 = (£)17.36 121.4 x 0.143 = 17.36 Allow for rounding. Do not award for more or less than 2 dp.	PS	10c
Question 12d	Method to calculate volume	5	**1 mark**: Valid method 3.14 × 0.4 × 0.4 × 1 = (0.5024)	Must be consistent units. Do **not** award for use of diameter.	PS	17a
	Correct volume		**1 mark**: Correct answer = 0.5024 Accept 0.502 – 0.503 *Can use range of 3.14 to 3.142 for pi.*	May be implied if 0.5024 seen.	PS	17a
	Method to convert volume to gallons		**1 mark:** Method to convert volume to gallons, eg = 0.5024 × 219.97	Allow FT for their volume. May be implied if 110.51 gallons seen.	PS	14c
	Correct number of gallons		**1 mark:** Correct number of gallons = 110.51 (gallons)		PS	14c
	Valid explanation given		**1 mark:** Valid explanation, eg "'Yes, she is correct, the container will hold more than 100 gallons".	Accept other valid answers. Do not accept 'yes' without supporting calculations. Allow FT for incorrect volume or number of gallons.	PS	17a
Task 4	**Process**	**Total**	**Mark allocation**	**Comments**	**PS or US**	**Subjec**

	(Task description)	mark				t content
Question 13	Plot coordinate on grid	1	**1 mark**: Point plotted correctly on graph		US	19
Question 14	Calculate the decimal	2	**1 mark:** correct calculation of decimal, ie (144 ÷ 240 = 0.6) converted to 6/10		US	8
	Convert to fraction in simplest form		**1 mark**: 3/5		US	8
Question 15a	Correct entry fees and percentage	4	**1 mark:** Complete entry fees in table, ie £300 and 25%	May be implied if 1200 or 228 or 384 or 108 or 180 seen.	PS	11b
	Calculate the ratio		**1 mark:** Find appropriate ratio, ie £:% as 300:25 OR 12:1 or 300 × 4.	May be implied if 1200 or 228 or 384 or 108 or 180 seen.	PS	11b
	Calculate total income		**1 mark:** Find total income, ie (£) 1200.	Units not required.	PS	11b
	Calculate total profit		**1 mark:** Calculate total profit, ie 1200 – 175 – 85 = (£) 940	Allow FT using their total income figure. Units not required.	PS	11b
Question 15b	Correct circumference	5	**1 mark:** Correct circumference of a cake, eg 2 × 80 × 3.14 = 502.4mm, accept 502 - 503mm	May be implied if 502-503 seen. May use metres or cm eg 8cm or 0.08m	PS	16a
	Correct ribbon length for 15 cakes		**1 mark:** Calculate ribbon length for 15 cakes, ie 502.4 × 15 = 7536mm	Alt method 12.5% first then × 15	PS	16a
	Calculate extra 12.5%		**1 mark:** Calculate 112.5%, eg 7536 × 1.125 OR equivalent = 8478(mm) Accept 8475 – 8481(mm).	Award if correct answer seen	PS	6
	Rounded length		**1 mark:** 9(m) required	Units not required. Award if correct answer seen	PS	6
	Calculate cost		**1 mark:** correct calculation of cost, eg 9(m) × £4.95 = £44.55		PS	6
Question 15c	Probability of winning a prize and of spin made by a girl	3	**1 mark:** Correct probability of a spin winning a prize given, eg 1/3 OR 4/12 **AND** Correct probability of a spin being made by a girl, ie ½ or 0.5	May be implied if 1/6th seen.	PS	27a

| | Method to calculate probability of 2 events | | **1 mark:** Method to calculate probability of a person being a girl and winning a prize, ie 1/3 × ½ = OR 0.5 × 0.33 = | Allow FT for their two individual probabilities. May be implied if 1/6th seen. | PS | 26 |
| | Correct probability of 2 events | | **1 mark** - Correct probability of 2 events, ie 1/6 OR 0.166 OR 16.6% | Allow FT for their two individual probabilities. | PS | 26 |

Annotation notes:

Annotation	Meaning
US	Underpinning skills
PS	Problem solving skills
FT	Follow through
(…)	Information that is not required for the mark point